MOODY'S INVESTORS SERVICE

SGL Monitor

SECTOR IN-DEPTH

17 March 2020

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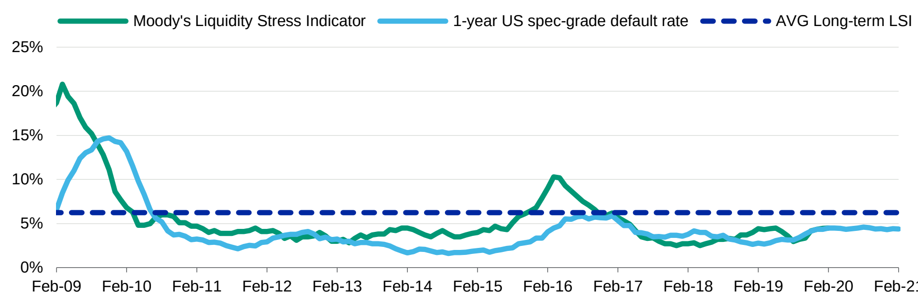
SGL Monitor — US

Liquidity stands at potential turning point as pandemic wreaks havoc on markets

Although our **Moody's Liquidity Stress Indicator** was unchanged in February at 4.5% versus January (Exhibit 1), the coronavirus pandemic has been causing rapid and unprecedented upheaval in global markets – leaving the liquidity underpinnings for many weakly positioned issuers extremely vulnerable. As we have repeatedly called out in recent years, the B3 ranks have been swelling to historic proportions and many of these are small, highly leveraged companies with weak fundamentals. Those more weakly positioned will have more difficulty accessing credit markets for refinancings and other needs.

Exhibit 1

LSI has continued to move slowly higher, although as yet it remains below the long-term average



Average Long-term LSI dates back to October 2002

Source: Moody's Investors Service

Over the past year, the LSI has gradually been edging higher amid signs that risks have been slowly rising. Throughout, with periodic exceptions, spec-grade issuers have maintained ready access to credit markets, thanks to investors' voracious yield appetite, a relatively benign default forecast and a solid US economy. This backdrop is rapidly changing. On March 6, our Moody's Macroeconomic Board lowered our US GDP growth forecast for 2020 to 1.5% from our previous call of 1.7% (see [Coronavirus will hurt economic growth in many countries through first half of 2020]). Please also see "*Credit effects stemming from Coronavirus outbreak are unprecedented*" on page 6.)

Record high: 20.8% March 2009; Record low: 2.5% Dec. '17, April '18

Please see our Data Sheet, which is posted separately on our website with supplemental charts and historical data that is available for download at any time. The SGL Monitor tracks movements in our proprietary Liquidity-Stress Indicator and provides analysis of spec-grade liquidity trends. The LSI falls when corporate liquidity appears to improve and rises when it appears to weaken.

Liquidity pressures will take a turn for the worst

Although Our **Moody's Liquidity Stress Indicator** was unchanged in February at 4.5% versus January, the coronavirus pandemic has spurred tremendous volatility among credit markets around the world. Over the past year, the LSI has gradually been edging higher amid signs that risks have been rising, although the Indicator has managed to stay comfortably below its 6.2% long-term average. Until now, spec-grade liquidity has remained well supported by a voracious investor appetite for yield, a relatively low default rate and a solid economic backdrop. This supportive backdrop is rapidly changing as global economies face major disruptions. This makes vulnerable issuers among the lower rated ranks more immediately susceptible to credit market volatility and erosion in investor confidence. They are also particularly vulnerable if investors exit higher risk exposures. Even before the World Health Organization declared the COVID-19 as a pandemic on March 11, more companies were starting to bump into refinancing pressures. In February, for example, all three liquidity downgrades to SGL-4 related to companies with upcoming maturities: pharmaceutical concern Akron, Inc. (Caa3 Stable); manufacturing concern Briggs & Stratton Corporation (B2 negative); and General Nutrition Centers, Inc. (Caa1 negative). Overall, there were five upgrades, with one from SGL-4 – the lowest liquidity score – and nine downgrades, three to SGL-4.

US spec-grade bond spreads have blown significantly wider since the start of the year, to 726 basis points as of March 12 from 331 basis at the start of January. To put this in context, spreads hit their widest point at 1917 basis points on December 5, 2008 during the last financial recession and the default rate peaked at 14.72% on November 30, 2009. At this point, our base case calls for the US spec-grade default rate to fall back to 4.37% in February 2021 from today's 4.48%, after hitting a high of 4.6% in August. Our worst-case scenario calls for the default rate to hit 10.89% a year from now. For further insights about our global default forecast, see Default Trends – Global February 2020 Default Report.

Credit effects stemming from Coronavirus outbreak are unprecedented

The rapid and widening spread of the coronavirus outbreak, deteriorating global economic outlook, falling oil prices and asset price declines are creating a severe and extensive credit shock across many sectors, regions and markets. The combined credit effects of these developments are unprecedented. We expect that credit quality around the world will continue to deteriorate, especially for those companies in the most vulnerable sectors that are most affected by prospectively reduced revenues, margins and disrupted supply chains. At this time, the sectors most exposed to the shock are those that are most sensitive to consumer demand and sentiment, including global passenger airlines, lodging and cruise, autos, as well as those in the oil & gas sector most negatively affected by the oil price shock. Lower-rated issuers are most vulnerable to these unprecedented operating conditions and to shifts in market sentiment that curtail credit availability. Moody's will take rating actions as warranted to reflect the breadth and severity of the shock, and the broad deterioration in credit quality that it has triggered.

For more information on research on and ratings affected by the coronavirus outbreak, please see moodys.com/coronavirus.

Exhibit 2 shows that our proprietary indicators have been edging higher across the board, with most now flagging moderate to rising risk. We expect these risks will continue to grow as the coronavirus pandemic takes a deepening toll on the US economy. For now, new issuance in the leveraged loan and high yield bond markets remains largely sidelined. Sectors that have been more vulnerable to default will remain in the spotlight.

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Exhibit 2

Moody's Leveraged Finance Credit Cycle Gauge: Risks are rising

Our key risk Indicators

	Credit Trend		Credit Quality Indicators					
	Month/Month Change	12 Month Forecast	Feb-20	Jan-20	Feb-19	Long-Term Average	Worst	Best
Liquidity Stress	—	▼	4.49%	4.47%	4.40%	6.2%	20.8%	2.5%
B3 Negative and Lower List	▼	▼	13.8%	13.5%	12.8%	14.7%	26.1%	7.9%
Three-Year Refunding	▲	▼	4.2x	3.7x	2.3x	5.7x	1.5x	11.5x
Bond Covenant Quality	▼	▲	4.49	4.48	4.53	4.13	4.57	3.39
Loan Covenant Quality	▼	▲	4.02	3.91	4.16	3.88	4.16	3.18
			Feb-21	**Feb-20**	**Jan-20**			
Default Forecast	▼	—	4.37%	4.48%	4.35%	4.7%	14%	2%

Risk Indicators

High — Moderate — Low

▲▼ Green - improving; Red - weakening

— Unchanged

*LCQI is quarterly and bond and loan CQI is through October 2019. **LT Avg.: LSI: from 2002, CQI: from 2011, LCQI: from 2012 B3-Neg: from 2007, Refunding: from 2007; Default rate from 1990.

Source: Moody's Investors Service

As of February, two sector LSIs were above the 10% threshold, which connotes greater default risk – Consumer Products & Proteins at 12.8% versus 7.5% a year ago, and Healthcare Services & Products at 10.5% versus 0% a year ago (Exhibit 3). Paper, Packaging & Forest Products, meanwhile, is just skirting the 10% threshold at 9.5%. Sectors that have fallen back to more benign readings – the retail and energy groups, among others – are now expected to be vulnerable to rising LSIs, given the current fallout. Oil and Gas LSI, for example, is currently 4.8% but rose to 24.5% during the last recession.

The retail sector was among the highest defaulters in 2019, ranking the third highest among corporate non-financial industries and adding 15% to the total defaulted pool of debt for the year. In our latest retail report, Following a year of rising defaults, retail buckles up for another rocky ride in 2020, we highlight the rising risks for this already-vulnerable industry in coming months. During the last recession, the retail sector LSI hit a peak of 20.4%. The oil & gas industry also experienced a high number of defaults in the last downturn and showed further vulnerability last year. Oil & gas companies made up 27% of all 2019 defaults and accounted for 41% of the largest defaults for issuers with more than $1 billion each in rated debt. Overall, defaults in 2019 totaled 71, exceeding the 42 for all of 2018. The 69% leap year-over-year was fueled by renewed tremors in the oil & gas patch on the heels of the 2015-16 energy crisis, when defaults and downgrades in this sector spiked.

Exhibit 3

Consumer Products, Healthcare Services are both above the 10% threshold

Sector	Current Number of SGL 4's	Current 02/29/2020	1 Year Ago 02/28/2019	Yearly Change	Recession Peak 3/31/09
Consumer Products & Proteins	5	12.8%	7.5%	5.3%	20.7%
Healthcare Services & Products	2	10.5%	0.0%	10.5%	9.1%
Paper, Packaging & Forest Products	2	9.5%	0.0%	9.5%	17.6%
Aerospace/Defense	1	6.3%	5.6%	0.7%	10.0%
Energy Other	2	6.3%	5.9%	0.4%	23.1%
Retail, Apparel & Restaurants	3	5.4%	1.8%	3.5%	20.4%
Business and Consumer Services	7	5.0%	6.1%	-1.1%	11.5%
Automotive	1	4.8%	9.5%	-4.8%	50.0%
Energy E&P	2	4.5%	13.6%	-9.0%	32.0%
Manufacturing	2	3.7%	0.0%	3.7%	14.8%
Wholesale Distribution	1	3.7%	0.0%	3.7%	20.0%
Energy OFS	1	3.6%	12.9%	-9.3%	9.1%
Chemicals	1	3.4%	0.0%	3.4%	14.3%
Construction & Engineering	1	3.1%	0.0%	3.1%	6.3%
Media	1	3.1%	2.9%	0.2%	56.7%
Metals & Mining	1	3.0%	8.1%	-5.1%	43.8%
Gaming	0	0.0%	0.0%	0.0%	41.7%
Technology & Semiconductors	0	0.0%	2.0%	-2.0%	0.0%
Telecom & Cable	0	0.0%	0.0%	0.0%	20.6%
Transportation Services	0	0.0%	0.0%	0.0%	25.0%
Utilities	0	0.0%	0.0%	0.0%	0.0%
Composite	**33**	**4.5%**	**4.4%**	**0.1%**	**20.8%**

Count is number of companies with a SGL-4 rating; ranking is highest to lowest based on sector LSIs. Chart only displays sectors with at least one SGL-4 issuer — see data sheet linked on page 2 for the chart with all sectors. Energy E&P is Independent exploration & production; Energy OFS is oil field services. Energy Other is midstream and refining & marketing; Metals & Mining includes coal. Note: In the "Yearly Change" column, darkening red indicates increases in LSI, while darkening green indicates decreases in LSI.

Source: Moody's Investors Service

The total number of public SGLs stood at 735 issuers in February (Exhibit 4), with 33 SGL-4 issuers, or 4.49% of the SGL population, compared with 738 issuers and 33 SGL-4 issuers in January. In February, three SGL-4 issuers fell from the SGL list, with two due to bankruptcy (newspaper McClatchy Company and retailer Pier 1 Imports (U.S.), Inc.). In January, SGL withdrawal activity pointed to a high level of M&A, especially among oil & gas issuers. There were a total of 13 withdrawals, seven due to M&A – four of these in the oil & gas sector – and one was due to bankruptcy (McDermott Technology (Americas), Inc.).

Exhibit 4

Affected debt for latest SGL-4 downgrades (additions are in bold)

As of 2/29/2020

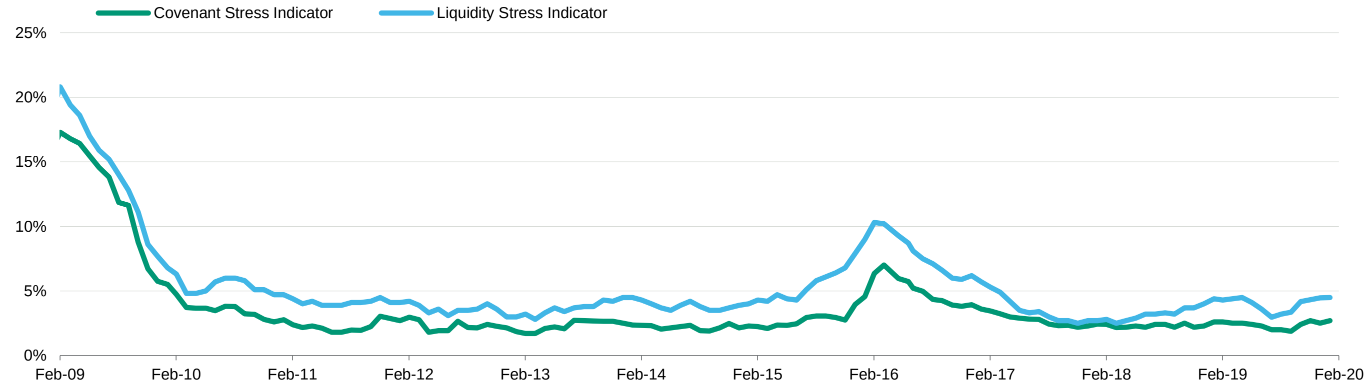
	Issuer	Industry	CFR	Outlook	Rated Debt ($ millions)
1	CHS/Community Health Systems, Inc.	Business and Consumer Services	Caa3	Stable	16,216
2	Coty Inc.	Consumer Products & Proteins	B2	Negative	14,248
3	Mallinckrodt International Finance SA	Healthcare Services & Products	Caa2	Negative	6,913
4	Ultra Resources, Inc.	Energy E&P	Ca	Negative	2,947
5	Revlon Consumer Products Corporation	Consumer Products & Proteins	Caa1	Negative	2,750
6	Owens & Minor, Inc.	Wholesale Distribution	B3	Negative	1,898
7	J.Crew Group, Inc.	Retail, Apparel & Restaurants	Caa2	Developing	1,744
8	Spirit Aerosystems, Inc.	Aerospace/Defense	Ba2	Down	1,600
9	Exela Intermediate LLC	Business and Consumer Services	Caa3	Negative	1,503
10	Foresight Energy, LLC	Metals & Mining	Caa2	Down	1,420
11	Quorum Health Corporation	Business and Consumer Services	Caa2	Negative	1,343
12	**Akorn, Inc.**	**Healthcare Services & Products**	**Caa3**	**Stable**	**1,045**
13	**General Nutrition Centers, Inc.**	**Retail, Apparel & Restaurants**	**Caa1**	**Negative**	**979**
14	Del Monte Foods, Inc.	Consumer Products & Proteins	Caa1	Stable	970
15	Pyxus International, Inc.	Consumer Products & Proteins	Caa2	Negative	970
16	Eagle Intermediate Global Holding B.V.	Chemicals	B3	Negative	965
17	Hornbeck Offshore Services, Inc.	Energy OFS	Caa3	Negative	825
18	Unit Corporation	Energy E&P	Caa1	Negative	650
19	Carvana Co.	Retail, Apparel & Restaurants	B3	Stable	600
20	**Tupperware Brands Corporation**	**Consumer Products & Proteins**	**Ba3**	**Down**	**600**
21	Rayonier A.M. Products Inc.	Paper, Packaging & Forest Products	B1	Negative	506
22	CPI Card Group Inc.	Business and Consumer Services	Caa1	Negative	475
23	Hi-Crush Inc.	Construction & Engineering	Caa1	Negative	450
24	Third Coast Midstream, LLC	Energy Other	B3	Negative	425
25	Priority Payment Systems Holdings, LLC	Business and Consumer Services	B3	Stable	423
26	Martin Midstream Partners L.P.	Energy Other	B3	Stable	400
27	Titan International, Inc.	Manufacturing	Caa1	Negative	400
28	Town Sports International, LLC	Business and Consumer Services	Caa2	Negative	340
29	AAC Holdings, Inc.	Business and Consumer Services	Caa2	Negative	330
30	Viskase Companies, Inc.	Paper, Packaging & Forest Products	B3	Negative	275
31	Salem Media Group, Inc.	Media	B3	Stable	255
32	Horizon Global Corporation	Automotive	C	Stable	210
33	**Briggs & Stratton Corporation**	**Manufacturing**	**B3**	**Down**	**195**

Source: Moody's Investors Service

Covenant violation risk notches higher

Moody's Covenant Stress Indicator (MCSI) rose to 2.7% in February from 2.5% in January, back to where it was in December, which comes amid a recent increase pointing to elevated covenant violation risks. However, risk remains well below the Indicator's 5.2% average (Exhibit 5). The prevalence of covenant-lite structures with no financial maintenance covenants in the syndicated term loan is sustaining good covenant flexibility. In particular, corporate cash flow and credit market access are limiting the need for companies to borrower under revolvers that have springing financial maintenance covenants.

Exhibit 5
Our MCSI, which captures the potential for covenant violations, has gained slightly



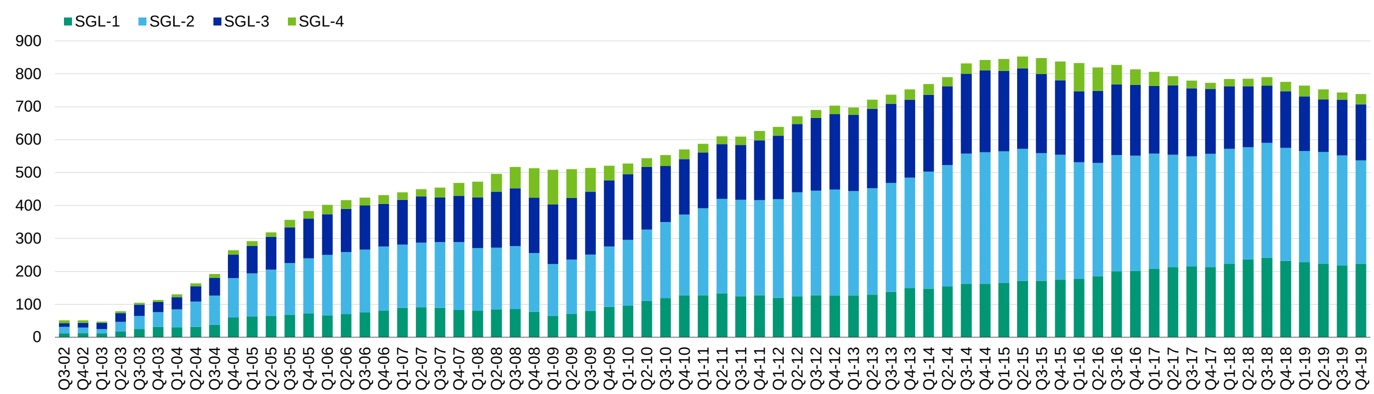
Source: Moody's Investors Service

SGL coverage: Some basics

Moody's has published speculative-grade liquidity ratings on 735 issuers covering about $2.5 trillion of rated debt at the end of February 2019 (see Exhibit 6). Most the SGL ratings are for US-based issuers, although roughly 7% of companies in the roster are Canadian, with a total of 12% of our issuers domiciled outside the US. SGL ratings cover about 45% of Moody's-rated speculative-grade issuers in the US and Canada, and about 70% of the rated debt. We typically assign public SGL ratings only to companies with publicly available financial statements, which are usually larger issuers of debt. The population of SGL issuers has grown dramatically since we first assigned liquidity ratings in 2002 (see Exhibit 6).

The LSI excludes many low rated firms that do not have public financial statements such as private equity-owned companies. However, the SGL analytical framework is applied to every speculative-grade company. The private companies are frequently smaller and more highly leveraged and thus including our internal assessments of the private companies would result in a worse LSI.

Exhibit 6
SGL Portfolio Composition
735 issuers and $2.5 trillion of rated debt



As of February 29, 2020
Source: Moody's Investors Service

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REPORT NUMBER 1219014

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